

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method implemented in a mobile radio terminal for reducing signaling associated with the mobile radio terminal selecting a new geographic coverage area, comprising:

in response to a location area update request message sent by the mobile radio terminal to a radio access network, receiving from a the radio access network a location update accept message including information indicating a list of one or more geographic coverage areas from which the mobile radio terminal may not obtain service;

storing the list of one or more geographic coverage areas;

checking the received information when considering whether to request service from a new geographic coverage area including checking the stored list prior to performing a subsequent geographic coverage area update; and

determining whether to select a geographic coverage area depending on the received information including determining whether to perform a location area update procedure based on the checked list.

2. Canceled.

3. (Currently Amended) A method implemented in a mobile radio terminal for reducing signaling associated with the mobile radio terminal selecting a new location area, comprising:

in response to a location area update request message sent by the mobile radio terminal to a radio access network, receiving from a the radio access network a location update rejection

message including information indicating a list of two or more location areas from which the mobile radio terminal may not obtain service;

storing the list of two or more location areas;

checking the received information when considering whether to request service from a new location area including checking the stored list prior to performing a subsequent location area update; and

determining whether to select a location area depending on the received information including determining whether to perform a location area update procedure based on the checked list. ~~The method in claim 1, wherein the geographic coverage area is a location area, and wherein the information is received in a location area update rejection message in response to a location area update request message sent by the mobile terminal to the radio access network.~~

4. (Previously Presented) The method in claim 1, further comprising:

receiving updated information from the radio access network.

5. (Canceled).

6. (Previously Presented) The method in claim 1, wherein the radio access network is shared by first and second operators and the information indicates one or more geographic coverage areas belonging to one of the operators that does not provide service to the mobile radio terminal.

7. (Previously Presented) The method in claim 6, further comprising:

selecting a geographic coverage area belonging to the other of the operators.

8. (Currently Amended) The method in claim 1, wherein the geographic coverage area is a location area and the information includes a list of forbidden location areas for the

mobile terminal, and wherein the mobile terminal does not perform a location area update for forbidden location areas on the forbidden location area list.

9. (Currently Amended) The method in claim 8, wherein the mobile terminal does not select cells in location areas that are on the forbidden location area list.

10. (Currently Amended) A method implemented in a cellular communications system including a radio access network for serving plural geographic coverage areas, comprising:

receiving a geographic coverage area update request message from a mobile radio terminal, and

in response to the received geographic coverage area update request message, sending in a geographic coverage area update accept message to the mobile radio terminal information indicating a list of the geographic coverage areas from which the mobile radio terminal may not request service,

wherein the mobile terminal uses the information to reduce signaling between the mobile terminal and the radio access network by not performing a geographic coverage area update procedure for a geographic coverage area included in the list.

11. (Canceled).

12. (Previously Presented) The method in claim 10, wherein the mobile terminal uses the information to determine whether to select a geographic coverage area.

13. Canceled.

14. (Currently Amended) The method in claim 13, further comprising:

updating the information in a subsequent geographic coverage area update message sent to the mobile terminal.

15. ~~(Currently Amended)~~Previously Presented) A method implemented in a cellular communications system including a radio access network for serving plural location areas,

comprising:

receiving a geographic coverage area update request message from a mobile radio terminal, and

in response to the received geographic coverage area update request message, sending in a geographic coverage area update reject message to the mobile radio terminal information indicating a list of two or more location areas from which the mobile radio terminal may not request service,

wherein the mobile terminal uses the information to reduce signaling between the mobile terminal and the radio access network by not performing a location area update procedure for a location area included in the list.~~The method in claim 10, further comprising:~~

~~sending the information in a geographic coverage area update reject message in response to a first coverage area update request message sent by the mobile terminal.~~

16. (Previously Presented) The method in claim 10, wherein the radio access network is shared by first and second operators and the information indicates one or more geographic coverage areas belonging to one of the operators that does not provide service to the mobile radio terminal.

17. (Previously Presented) The method in claim 10, wherein the geographic coverage area is a location area, the method further comprising:

determining one or more groups identifying certain mobile terminals;

formulating a list of location areas corresponding to each of the groups; and

in response to the message received from the mobile terminal, forwarding one of the lists of location areas to the mobile terminal depending upon the group to which the mobile terminal belongs.

18. (Previously Presented) The method in claim 17, wherein the determining, formulating, and forwarding are performed in a core network coupled to the radio access network.

19. (Previously Presented) The method in claim 17, wherein each group represents mobile terminals belonging to a network operator.

20. (Previously Presented) The method in claim 17, wherein each group represents mobile terminals belonging to a mobile subscriber group.

21. (Previously Presented) The method in claim 17, further comprising:
determining an identifier associated with the mobile terminal;
analyzing the mobile terminal identifier to determine the group to which the mobile terminal belongs; and

sending the list of location areas corresponding to the determined group in response to the message received from the mobile terminal.

22. (Previously Presented) The method in claim 10, wherein the information is sent from a core network to the radio access network.

23. (Canceled).

24. (Canceled).

25. (Canceled).

26. (Canceled).

27. (Currently Amended) A method for use in a cellular radio communications system including a core network coupled to a radio access network communicating information with mobile radio terminals over a radio interface, comprising:

storing a list of forbidden location areas for a group of mobile terminals;

receiving a ~~communication~~ location area update request message sent from one of the mobile terminals in the group;

sending in a location area update accept message the list of forbidden location areas to the one mobile terminal;

the one mobile terminal receiving and storing the list of forbidden location areas; and

the one mobile terminal checking the list of forbidden location areas and not performing a location area update operation for a location area that is on the list of forbidden location areas in order to reduce signaling between the mobile terminal and the radio access network.

28. (Previously Presented) The method in claim 27, wherein the one mobile terminal does not select a cell in a location area that is on the list of forbidden location areas.

29. (Canceled).

30. (Previously Presented) The method in claim 27, wherein the radio access network is shared by first and second operators and the list of forbidden location areas indicates one or more location areas belonging to one of the operators that does not provide service to the mobile radio terminal.

31. (Previously Presented) The method in claim 27, wherein the list is sent in response to a first location update message sent by the one mobile terminal after the mobile terminal powers up.

32. (Currently Amended) Apparatus for use in a mobile radio terminal, comprising:

radio transceiving circuitry configured to receive from a radio access network information indicating a list of one or more geographic coverage areas from which the mobile radio terminal may not obtain service, and

electronic circuitry configured to perform the following tasks:

check the stored list prior to determining whether to perform a geographic coverage area update, and

determine not to perform a geographic coverage area update based on the checked list in order to reduce signaling between the mobile radio terminal and the radio access network,

wherein the geographic coverage area is a location area, and the information is received in a location area update accept message in response to a first location area update request message sent by the mobile terminal to the radio access network.

33. Canceled.

34. (Currently Amended) Apparatus for use in a mobile radio terminal, comprising:
radio transceiving circuitry configured to receive from a radio access network
information indicating a list of one or more geographic coverage areas from which the mobile
radio terminal may not obtain service, and

electronic circuitry configured to perform the following tasks:

check the stored list prior to determining whether to perform a geographic
coverage area update, and

determine not to perform a geographic coverage area update based on the checked list in
order to reduce signaling between the mobile radio terminal and the radio access network,

The apparatus in claim 32, wherein the geographic coverage area is a location area, and wherein the information is received in a location area update rejection message in response to a location area update request message sent by the mobile terminal to the radio access network.

35. (Previously Presented) The apparatus in claim 32, wherein the electronic circuitry is further configured to store the list of one or more geographic coverage areas, to check the received information when considering whether to request service from a new geographic coverage area, and to determine whether to select a geographic coverage area depending on the received information .

36. (Previously Presented) The apparatus in claim 32, wherein the radio access network is shared by first and second operators and the information indicates one or more geographic coverage areas belonging to one of the operators that does not provide service to the mobile radio terminal, and wherein the electronic circuitry is further configured to select a geographic coverage area belonging to the other of the operators.

37. (Previously Presented) The apparatus in claim 32, wherein the geographic coverage area is a location area and the information includes a list of forbidden location areas for the mobile terminal.

38. (Previously Presented) The apparatus in claim 37, wherein the electronic circuitry is further configured to not select a cell in a location area that is on the list of forbidden location areas.

39. (Previously Presented) The apparatus in claim 37, wherein the electronic circuitry is further configured to not perform a location area update procedure for a location area that is on the list of forbidden location areas.

40. (Currently Amended) Radio access network apparatus for use in a cellular communications system including a radio access network serving plural geographic coverage areas, comprising:

radio transceiving circuitry configured to receive a message from a mobile radio terminal,
and

data processing circuitry configured to provide information indicating a list of geographic coverage areas from which the mobile radio terminal may not request service,

wherein the mobile radio terminal uses the information to reduce signaling between the mobile terminal and the radio access network by not performing a geographic coverage area update procedure for a geographic coverage area included in the list,

wherein the data processing circuitry is configured to provide the information in a geographic coverage area update accept message in response to an initial geographic coverage area update request message sent by the mobile terminal.

41. (Previously Presented) The apparatus in claim 40, wherein the mobile terminal uses the information to determine whether to perform a location update procedure and whether to select a geographic coverage area.

42. Canceled

43. (Currently Amended) Radio access network apparatus for use in a cellular communications system including a radio access network serving plural geographic coverage areas, comprising:

radio transceiving circuitry configured to receive a message from a mobile radio terminal,
and

data processing circuitry configured to provide information indicating a list of two or more geographic coverage areas from which the mobile radio terminal may not request service,

wherein the mobile radio terminal uses the information to reduce signaling between the mobile terminal and the radio access network by not performing a geographic coverage area update procedure for a geographic coverage area included in the list,

~~The apparatus in claim 40, wherein the data processing circuitry is being configured to provide the information in a geographic coverage area update reject message in response to a geographic coverage area update request message sent by the mobile terminal.~~

44. (Previously Presented) The apparatus in claim 40, wherein the radio access network is shared by first and second operators and the information indicates one or more geographic coverage areas belonging to one of the operators that does not provide service to the mobile radio terminal.

45. (Previously Presented) The apparatus in claim 40, wherein the geographic coverage area is a location area and the data processing circuitry is configured to determine one or more groups identifying certain mobile terminals, formulate a list of location areas corresponding to each of the groups, and forward the list of location areas to a mobile terminal depending upon the group to which the mobile terminal belongs.

46. (Previously Presented) The apparatus in claim 45, wherein the electronic circuitry for performing the determining, formulating, and forwarding tasks is located in a core network coupled to the radio access network.

47. (Previously Presented) The apparatus in claim 45, wherein each group represents mobile terminals belonging to a network operator.

48. (Previously Presented) The apparatus in claim 45, wherein each group represents mobile terminals belonging to a mobile subscriber group.

49. (Previously Presented) The apparatus in claim 45, wherein the data processing circuitry is configured to determine an identifier associated with the mobile terminal, analyze the mobile terminal identifier to determine the group to which the mobile terminal belongs, and provide the list of location areas corresponding to the determined group in response to the message received from the mobile terminal.